## REMARKS

Claims 72-79 are pending in the present application. Claims 72-79 have been rejected. Claims 72, 74, 76, and 79 have been amended. The specification has been amended. The Amendments here presented are made for the purposes of better defining the invention, rather than to overcome the rejections for patentability. No presumption should therefore attach that the claims have been narrowed over those earlier presented, or that subject matter or equivalents thereof to which the Applicants are entitled has been surrendered. No new matter has been introduced by these amendments. Reconsideration and allowance is respectfully requested in view of the amendments and the following remarks.

The 35 U.S.C. §102 rejections

Claims 72-73 have been rejected under 35 U.S.C. § 102(e), as being anticipated by Nishibayashi (U.S. Patent No. 6,171,691). The Examiner contends, "Nishibayashi discloses the porous diamond to the claimed other substrate." Applicant respectfully disagrees with the Examiner's assertions.

To anticipate a claim under 35 U.S.C. § 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988). Moreover, the single source must disclose all of the claimed elements "arranged as in the claim." *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984).

The Nishibayashi reference discloses a heat sink material for use with a semiconductor component, comprising a plurality of diamond particles, a metal, and a metal carbide. The metal carbide and diamond particles constitute the matrix, and the metal fills the interstices of the matrix. (Abstract)

The Nishibayashi reference does not teach or suggest each and every element of the claimed invention. The present invention claims, as amended, "an open-cell diamond

foam material article." In contrast to the claimed invention, the Nishibayashi reference teaches a solid heat sink material that is comprised of a metal, a metal carbide, and diamond particles. (Col. 5, lines 50-60) The heat sink is a solid material, not an open-cell diamond foam as claimed.

The Nishibayashi reference does not teach or suggest each and every element arranged as claimed. Therefore, Claim 72 is not anticipated by the Nishibayashi reference. Since Claim 72 is not anticipated by the Nishibayashi reference, dependent Claim 73 is also not anticipated by the Nishibayashi reference.

Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 72-73 and 76-78 have been rejected under 35 U.S.C. § 102(e), as being anticipated by Ritt et al. (U.S. Patent No. 6,238,280). The Examiner contends, "Ritt et al discloses the claimed porous diamond soldered and attached to another diamond compact." Applicant respectfully disagrees with the Examiner's assertions.

As stated above, to anticipate a claim under 35 U.S.C. § 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988). Moreover, the single source must disclose all of the claimed elements "arranged as in the claim." *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984).

The Ritt et al. reference discloses an abrasive cutter formed of at least one diamond particle, preferably at least one mono-diamond crystal and metallic binder material. The abrasive cutters can be applied directly onto an abrasive tool. Further they can be processed to form composite cutters or cutting segments. (Abstract)

The Ritt et al. reference does not teach or suggest each and every element of the claimed invention. The present invention claims, as amended, "an open-cell diamond foam material article." In contrast to the claimed invention, the Ritt et al. reference teaches depositing diamond particles on an abrasive cutter, which can be utilized as

cutting segments for hollow drill crowns, wall saw blades or cutting-off wheels. The specification and Figures 1-5 and 8 clearly demonstrate that the resulting abrasive cutter is a solid structure. (Col. 2, line 66 to Col. 3, line 12; Col. 3, line 66 to Col. 4, line 5; Col. 6, line 57 to Col. 7, line 18) The abrasive cutter is a solid material, not an open-cell diamond foam as claimed.

The Ritt et al. reference does not teach or suggest each and every element arranged as claimed. Therefore, Claims 72 and 76 are not anticipated by the Ritt et al. reference. Since Claims 72 and 76 are not anticipated by the Ritt et al. reference, dependent Claims 73 and 77-78 are also not anticipated by the Ritt et al. reference.

Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 74-75 have been rejected under 35 U.S.C. § 102(e), as being anticipated by Colella et al. (U.S. Patent No. 5,783,316) or Nakai et al. (U.S. Patent No. 5,037,704) or Cho (U.S. Patent No. 4,944,772) or Slutz et al. (U.S. Patent No. 4,931,363) or Gigl et al. (U.S. Patent No. 4,738,689) or Bovenkerk (U.S. Patent No. 4,268,276). The Examiner contends, "The above references disclose the porous diamond brazed to the claimed other substrate." Applicant respectfully disagrees with the Examiner's assertions.

As stated above, to anticipate a claim under 35 U.S.C. § 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988). Moreover, the single source must disclose all of the claimed elements "arranged as in the claim." *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984).

The Colella et al. reference discloses a process for fabricating a composite material such as that having high thermal conductivity and having specific application as a heat sink or heat spreader for high density integrated circuits. The composite material consists of coated diamond particles dispersed in a high conductivity metal, such as copper. The process basically consists, for example, of sputter coating diamond powder

with several elements, including a carbide forming element and a brazeable material, compacting them into a porous body, and infiltrating the porous body with a suitable braze material, such as copper-silver alloy, thereby producing a dense diamond-copper composite material. (Abstract)

The Marek reference discloses a method for coating cluster compacts of polycrystalline diamond and CBN particles. The cluster compact is not exposed to high temperatures due to selective heating of the coating/cluster compact interface with the use of laser energy. Strong coatings can be formed on thermally sensitive compacts, which allow such compacts to be brazed directly to a tool holder.

The Nakai et al. reference discloses a sintered diamond compact or high pressure form boron nitride compact with an improved brazability, suitable for use for wear resisting tools, cutting tools, drill bits, dressers and wire-drawing dies. This compact comprises a compact part containing at least 20% by volume of diamond and/or high pressure form boron nitride and a cemented carbide substrate bonded directly or through an interlayer to the compact part. (Abstract)

The Cho reference discloses a process for fabricating a supported polycrystalline diamond or CBN bi-layer compact. The process comprises forming a sintered polycrystalline or CBN compact, which preferably is a thermally-stable compact. A cemented carbide support is separately formed. The compact and the support then are mated with a layer of diamond or CBN crystals having the largest dimension of between about 30 and 500 micrometers interposed therebetween. A source of catalyst/sintering aid material is provided in association with the layer of interposed crystals. The entire assembly then is subjected to HP/HT conditions and for a time adequate for converting the diamond or CBN crystals into a polycrystalline diamond or CBN layer and for producing the bi-layer supported compact of the present invention. (Abstract)

The Slutz et al. reference discloses a brazed implement comprising a thermally-stable polycrystalline diamond compact (e.g., a compact of self-bonded diamond particles having a network of inter-connected empty pores dispersed throughout the compact)

bonded to another of the compact or bonded to a cemented carbide support by a brazing filler metal disposed therebetween. (Abstract)

The Gigl et al. reference discloses an improved polycrystalline compact of self-bonded diamond particles having a network of interconnected empty pores dispersed throughout. The improved porous polycrystalline diamond compact possesses enhanced oxidation resistance and comprises all of the exterior surfaces of the porous compact being enveloped with a continuous coating which is effective under metal bond fabrication conditions so that oxidation of the diamond in the compact does not exceed a threshold level whereat loss of diamond properties of the compact occurs. (Abstract)

The Bovenkerk reference discloses a compact for tools, such as cutting, drilling, wire drawing and shaping tools, that consists essentially of a porous mass of self-bonded, boron-doped diamond particles and a catalyst-solvent material. The method for making such a compact comprises the steps of bonding a mass of boron-doped diamond particles, aided by a catalyst-solvent material, under high temperatures and high pressures (HP/HT). (Abstract)

The Colella et al., Marek, Nakai et al., Cho, Slutz et al., Gigl et al., and Bovenkerk references do not teach or suggest each and every element of the claimed invention. The present invention claims, as amended, "an open-cell diamond foam material article." In contrast to the claimed invention, the above references teach forming a diamond compact or diamond composite material. The process of compacting the diamond material into a compact, or diamond composite material, results in a porous structure. However, the resulting compact has extremely small void fractions and volumes that improves the fracture toughness of the compact. Thus, the compact is useful for cutting tools and cannot allow for fluid flow through the compact. Therefore, the compact is not an open-cell diamond foam as claimed.

The Colella et al., Marek, Nakai et al., Cho, Slutz et al., Gigl et al., and Bovenkerk references do not teach or suggest each and every element arranged as claimed. Therefore, Claim 74 is not anticipated by the Colella et al., Marek, Nakai et al., Cho,

Slutz et al., Gigl et al., and Bovenkerk references. Since Claim 74 is not anticipated by the Colella et al., Marek, Nakai et al., Cho, Slutz et al., Gigl et al., and Bovenkerk references, dependent Claim 75 is also not anticipated by the Colella et al., Marek, Nakai et al., Cho, Slutz et al., Gigl et al., and Bovenkerk references.

Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 76-78 have been rejected under 35 U.S.C. § 102(e), as being anticipated by Slutz (U.S. Patent No. 4,850,523). The Examiner contends, "Slutz discloses the porous diamond bonded to the claimed other substrate." Applicant respectfully disagrees with the Examiner's assertions.

As stated above, to anticipate a claim under 35 U.S.C. § 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988). Moreover, the single source must disclose all of the claimed elements "arranged as in the claim." *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984).

The Slutz reference discloses a method for bonding thermally-stable polycrystalline diamond or CBN compacts to carbide supports. The carbide support is placed in thermal contact with a heat sink and the thermally-stable compact is placed in thermal contact with a heat source during the brazing operation. (Abstract)

The Slutz reference does not teach or suggest each and every element of the claimed invention. The present invention claims, as amended, "an open-cell diamond foam material article." In contrast to the claimed invention, the Slutz reference teaches bonding thermally-stable polycrystalline diamond or CBN compacts to carbide supports. (Abstract) The process of compacting the diamond material into a compact results in a porous structure. However, the resulting compact has extremely small void fractions and volumes that improves the fracture toughness of the compact. Thus, the compact is

useful for cutting tools and cannot allow for fluid flow through the compact. Therefore, the compact is not an open-cell diamond foam as claimed.

The Slutz reference does not teach or suggest each and every element arranged as claimed. Therefore, Claim 76 is not anticipated by the Slutz reference. Since Claim 76 is not anticipated by the Slutz reference, dependent Claims 77 and 78 are also not anticipated by the Slutz reference.

Reconsideration and withdrawal of this rejection is respectfully requested.

Claim 79 has been rejected under 35 U.S.C. § 102(e), as being anticipated by Skinner (U.S. Patent No. 6,263,250). The Examiner contends, "Skinner discloses the porous diamond adhesively bonded to the claimed other substrate." Applicant respectfully disagrees with the Examiner's assertions.

As stated above, to anticipate a claim under 35 U.S.C. § 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988). Moreover, the single source must disclose all of the claimed elements "arranged as in the claim." *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984).

The Skinner reference discloses a lead assembly having a ring electrode that is adapted for implant and for connection to a system for monitoring or stimulating cardiac activity. The lead assembly includes a first porous member disposed around the ring electrode at the distal end of the lead assembly, which can be used as a sensing or pacing interface with the cardiac tissue. In addition, a second porous member is disposed over the first porous member and is electrically coupled with the ring electrode. (Abstract) The first porous member can be made of diamond or diamond coated. (Col. 4, lines 12-25) The Skinner reference discloses that in one embodiment the first porous member 134 comprises a mesh 135 made of platinum wire, where the mesh 135 is disposed over the ring electrode. (Col. 4, lines 3-5)

The Skinner reference does not teach or suggest each and every element of the claimed invention. The present invention claims, as amended, "an aperiodic open-cell diamond foam material article." In contrast to the claimed invention, the Skinner reference teaches a porous member that can be diamond coated or of diamond construction that can be a mesh made of platinum wire (Col. 4, lines 12-25; Col. 4, lines 3-5) A wire mesh is not the same as the aperiodic open-cell diamond foam as claimed. A wire mesh is a structure having filaments regularly disposed in a repeating, periodic pattern. The open-cell diamond foam as claimed is an aperiodic article, having little or no regular or ordered structure.

The Skinner reference does not teach or suggest each and every element arranged as claimed. Therefore, Claim 79 is not anticipated by the Slutz reference.

Reconsideration and withdrawal of this rejection is respectfully requested.

Request for Allowance

It is believed that this Amendment places the above-identified patent application into condition for allowance. Accordingly, entry of this Amendment is appropriate and is respectfully requested.

If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the number indicated below.

Respectfully submitted,
SIERRA PATENT GROUP, LTD.

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Kenneth D'Alessandro
Reg. No: 29,144

Sierra Patent Group, Ltd.
P.O. Box 6149
Stateline, NV 89449
Tel. (775) 586-9500
FAX (775) 586-9550